

Remarks

Claims 1-22 and 24-27 are pending in this application. Claims 23 and 28-33 have been cancelled without prejudice or disclaimer of the subject matter therein. No new matter has been added. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1, 4-7 and 10-12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Amberg (U.S. Patent No. 5,963,743) in view of Kittross et al. (U.S. Patent No. 6,681,351), and further in view of Mutchler et al. (U.S. Patent No. 6,689,157). Claims 2, 3, 8, and 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Amberg in view of Kittross in view of Mutchler and further in view of Proskauer (U.S. Patent No. 5,828,674). Claims 13 and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kittross in view of Mutchler and further in view of Blitz (U.S. Patent No. 6,047,293). Claims 15-22, 24 and 25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Amberg in view of Kittross in view of Proskauer and Amberg. Claims 26-33 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kittross in view of Proskauer and further in view of Blitz. Applicant respectfully traverses these rejections for reasons set forth hereafter.

Beginning with claim 1, the Office Action asserts the Amberg describes a database server 100 that is equivalent to the test management system recited in Claim 1. The Office Action further asserts that the database server 100, described by Amberg, is located remotely from the computer stations, storing different types of software components for different target systems. However, Claim 1 concerns a method for distributing software components to a plurality of test stations that each analyze products. The method of claim 1 specifically recites “accessing a test management system that is located remotely from the test stations, the test stations each analyze products, the test management system storing a plurality of software components.”

It is clear from Amberg that the item being tested is the target system 160, not a product as claimed. Claim 1 recites three types of devices, a test management system, test stations, and products being analyzed. Claim 1 also requires the test management system to be located remotely from the test stations. Amberg does not have three types of devices. Instead, Amberg

only describes a database server 100 and a target system 160. Further, Amberg's server 100 and target system 160 are located at a common location, not remotely from one another.

Claim 1 further recites "obtaining at least one of the software components that includes information used by a computer station which communicates with a test station to analyze a product, wherein an instrument is used to test the product." Amberg does not describe obtaining at least one of the software components that includes information used by the test station to analyze a product as recited in Claim 1. As discussed above, Amberg does not describe a test station that is located remotely from the database server 100, that the Office Action asserts is equivalent to the test management system. Moreover, Amberg does not describe a computer station that communicates with the test station. Rather, Amberg merely describes that software is downloaded from the database server directly to the product being tested. Accordingly, Amberg does not describe obtaining at least one of the software components that includes information used by the test station to analyze a product, wherein an instrument is used to test the product as recited in Claim 1. Moreover, Amberg does not describe that an instrument is used to test the product as recited in Claim 1. Rather, Amberg describes that the software is downloaded directly from the database server 100 into the product, i.e. the target system 160. Accordingly, Amberg does not describe obtaining at least one of the software components that includes information used by the test station to analyze a product as recited in Claim 1.

Claim 1 further recites "downloading at the computer station an equipment file set including said software component, said equipment file set directing the computer station to operate the instrument to analyze the product." Amberg does not describe downloading an equipment file set from computer station including the software component. As discussed above, the Office Action asserts that the database server 100 is equivalent to the test management system. However, Amberg, therefore does not describe downloading at the computer station an equipment file set.

Claim 1 further recites "distributing the software component, from the test management system, to the test station automatically based on at least one of an identification of the test station and an identification of the product." In contrast to the recitations of Claim 1, Amberg describes a step maker 140 that sequences the software installation and testing steps to be run on target system 160. A sequencing program 204 writes a series of output files to step disk 150.

The step disk 150 accompanies target system 160 on the factory floor where tests are run directly from step disk 150 or, alternatively, from file server 190, connected to target system 160 via network connection 180.

Amberg does not describe distributing the software component, from the test management system, to the test station automatically based on at least one of an identification of the test station and an identification of the product as recited in Claim 1. In contrast to the present invention, Amberg describes that a step disk 150 is manually delivered and then installed into the target system. Optionally, the software described by Amberg may be transmitted from the file server 190 to the target system 160. In either case, Amberg does not describe distributing the software component, from the test management system to the test station automatically based on at least one of an identification of the test station and an identification of the product as recited in Claim 1.

Accordingly, Amberg does not describe a method for distributing software components to a plurality of test stations. Nor does Amberg describe accessing a test management system that is located remotely from the test stations, the test stations each analyze products, the test management system storing a plurality of software components. Nor does Amberg describe obtaining at least one of the software components that include information used by the test station to analyze a product, and distributing the software component, from the test management system to the test station automatically based on at least one of an identification of the test station and an identification of the product.

The Office Action seeks to address the foregoing deficiencies of Amberg by applying a secondary reference (Kittross) and a tertiary reference (Mutchler). Yet when the teachings of Amberg are compared to the drastically different and diverse teachings of Kittross and Mutchler, it is clear that the combination is based solely on improper hindsight reconstruction.

For example, the Office Action asserts that Kittross makes up for the deficiencies of Amberg by teaching “software components include information used by a computer station which communicates with a test station to analyze a product” which the Office Action notes is not taught by Amberg. However, Kittross describes a test procedure for testing a device using automatic test equipment (ATE) 20. Among other things, Kittross describes a method of

transmitting test procedures from the test element database to the local memory, each of which is located in the same ATE. As such, Kittross does not describe a method for distributing software components from a test management system that is located remotely from the computer station as recited in Claim 1.

The Office Action notes that neither Amberg nor Kittross disclose “distributing is based on at least one identification of the test station and identification of the product.” However, Claim 1 actually recites “distributing the software component, from the test management system, to the computer station automatically based on at least one of an identification of the test station and an identification of the product.”

Mutchler does not describe the above recited elements of Claim 1 and as such does not make up for the deficiencies of Amberg and Kittross. Rather, in contrast to Claim 1, Mutchler describes a method of installing and configuring a test suite for a unit under test (UUT) in an automated assembly process. In Mutchler, a user inputs an identifier into the UUT. The identifier is received by a test suite server 130 that retrieves a Bill of Materials corresponding to the UUT from an IT server 140. Test files and other files specific to the Bill of Materials are then generated by the test suite server 130 and copied to the UUT. Mutchler describes distributing a software component (the test suite) directly into the product being tested (the UUT), i.e. directly from the file server into the product which performs a self test. Mutchler does not automatically distribute a software component from a test management system to a computer station that communicates with a test station that is used to analyze a product as recited in Claim 1. Rather, and in contrast to the present invention, Mutchler describes that to initiate the process, the user inserts the single bootable CD applicable into the target system. As such, none of Amberg, Kittross, or Mutchler, alone or in combination describe distributing the software component, from the test management system, to the computer station automatically based on at least one of an identification of the test station and an identification of the product as recited in Claim 1.

Moreover, to the extent that a person of ordinary skill would have a reason to implement a software distribution method in the relevant field, that person would look to the teachings of Kittross and Mutchler, not to the teachings of Amberg. The person of ordinary skill would have no reason to take Amberg basic system for constructing build-to-order computers and implement

it to distribute software components to computers that are already built and already in the field and running. Instead, it is submitted that Kittross and Mutchler teach specific methods for installing software in the relevant field, and both install the software directly on the ATE or UUT which differs from the claimed invention. As such any method for installing software for test stations that analyze products would necessarily include the software installation methods taught by Kittross and Mutchler. Thus, the rejection of claim 1 is improperly based on hindsight reconstruction and should be withdrawn.

Claims 4-7 and 10-12 depend from Claim 1, which is submitted to be in condition for allowance. In view of the foregoing, it is submitted the claims 4-7 and 10-12 are also patentable over the cited art.

Turning to the obviousness rejection of claims 2, 3, 8 and 9, Applicant submits that Proskauer fails to make up for the deficiencies noted above and in the outstanding Office Action of the three previously applied references. Proskauer describes a test system that includes a PC workstation 2000, a tester 2002, and a semiconductor handler 2004. The workstation 2000 includes an operator controls section 2022 that is installed within workstation 2000 and is loaded with a library of handler drivers. During use, an operator selects a handler from a menu of available handler drivers that are installed on the local workstation, connects it, and enables it.

The Office Action asserts, on pages 7, that Proskauer describes "an instrument used to test the product (handler 2004 of figure 2." Applicant traverses this assertion. It is clear from the reading of Proskauer that the product being tested is a semiconductor device. Moreover, Proskauer describes that "the term handlers is used generically to refer to packaged device handlers or wafer probers." As is well known in the art and stated in Proskauer, a device handler or wafer prober is a material handling system positions a semiconductor device for testing by a tester 2002. The wafer prober or device handler is not the same as the instrument used to test the product as the instrument used to analyze the product as recited in Claims 2 and 3. Rather, Proskauer clearly describes that the tester 2002 is used to perform a full test or "job" on a device under test (DUT). Proskauer also describes that each handler has its own driver containing only the code necessary to operate that specific handler. However, the handler does not analyze the product as asserted in the Office Action at page 8, rather the device is analyzed or tested using the tester 2002.

As such, Proskauer does not describe that “said equipment file set directing the computer station to operate an instrument, said equipment file set being uniquely associated with the computer station and independent of the product” as recited in Claim 2. Rather Proskauer describes that each handler has its own driver containing only the code necessary to operate that specific handler. Proskauer does not describe any software being installed on the computer to operate the tester 2002 and therefore does not describe an “equipment file set directing the computer station to operate the instrument” as recited in Claim 2. Since, Proskauer does not describe software being installed on the computer to operate the tester 2002, Proskauer also does not describe the recitations of Claim 3.

Claim 8 further defines the equipment file set to include a file identifying a communications protocol between the computer station, the product and the instrument used to test the product. As discussed above, the handler driver described by Proskauer is not the same as the instrument used to test the product as recited in the claims. Proskauer clearly describes that the instrument used to test the semiconductor package is the tester 2002.

The Office Action cites to portions of column 6 in Proskauer as allegedly teaching the claimed limitation. The undersigned strenuously disagrees. Column 6 of Proskauer does not describe including a protocol identification file in an equipment file set. Proskauer’s handler driver 2024, handler tester control 2026 interface 2008, or tester 2002 do not create, nor save, the claimed protocol identification file. In fact, Proskauer does not need a protocol identification file as Proskauer’s handler drivers, used to operate the handler 2004 not the tester 2002 which analyzes the product, are written and stored directly on a single workstation. In contrast, in claim 8, the protocol identification file (as part of the equipment file set) is distributed automatically to remote computer stations. Therefore, Proskauer does not describe an equipment file set to include a file identifying a communications protocol between the computer station, the product and the instrument used to test the product as recited in Claim 8.

Claim 9 further defines the equipment file set to include a file identifying a calibration for an instrument to be used by the computer station to analyze the product. The Office Action cites to portions of column 6 of Proskauer as allegedly teaching the claimed limitation. The undersigned strenuously disagrees. Column 6 of Proskauer also lacks any true discussion of the claimed calibration file. Specifically, no where in Proskauer is there described calibrating the

tester 2002 or the handler 2004 which the Office Action has erroneously asserted is equivalent to the instrument used to analyze the product.

Turning to the obviousness rejection of claims 13 and 14, Applicant submits that Blitz fails to make up for the deficiencies noted above and in the outstanding Office Action of the three previously applied references. Blitz describes a semiconductor test system in which a spreadsheet workbook has one or more spreadsheets containing nested levels of name device parameter data. Blitz, like Proskauer, describes that the handler drivers are installed in the operator controls section 2022 located within workstation 2000. As discussed above in Proskauer, the term handlers is used generically to refer to packaged device handlers or wafer probers. As is well known in the art and stated in Proskauer, a device handler or wafer prober is a material handling system positions a semiconductor device for testing by a tester 2002. The wafer prober or device handler is not the same as the instrument used to test the product as the instrument used to analyze the product as recited in Claims 13 and 14. Rather, Proskauer clearly describes that the tester 2002 is used to perform a full test or "job" on a device under test (DUT).

As such, Blitz does not describe a method for distributing software components that includes "storing a relationship between the software components, products, instruments, and computer stations" as recited in Claim 13, nor does Blitz describe a method for distributing software components that includes "storing in a database information identifying multiple products, test stations used to test each product, instruments used to test the products, and fixtures used to hold the products" as recited in Claim 14.

Turning to the obviousness rejection of claims 15-22, 24 and 25, Applicant submits that the outstanding Office Action fails to set forth a *prima facie* case of obviousness. No legitimate reason exists to modify the combined teachings of Kittross and Proskauer based on Amberg. Claim 15 recites "a management system database configured to be used with a computer station that operates an instrument when analyzing a product, wherein the database stores software components that are configured to be executed by the computer station to communicate with and operate the instrument in order to analyze the product, the database is located remotely from the computer station and automatically accesses the software components based on identification of at least one of the computer station, the instrument and the product."

As acknowledged in the Office Action, Kittross and Proskauer fail to locate a database remote from the computer station. Amberg allegedly makes up for this deficiency. Amberg's teachings are entirely unrelated to the pertinent field, namely a management system database configured to be used with a computer station that operates an instrument when analyzing a product. It is significant to note that, while Kittross and Proskauer are within the relevant field, they specifically teach to install software directly on the ATE and workstation, respectively. The only reference relied on in the outstanding Office Action as allegedly teaching to distribute software to remote computer stations is Amberg. Amberg's build-to-order computers fundamentally differ from the claimed database.

Moreover, as discussed above with respect to Claims 2 and 3, Proskauer describes a test system that includes a PC workstation 2000, a tester 2002, and a semiconductor handler 2004. The workstation 2000 includes an operator controls section 2022 that is installed within workstation 2000 and is loaded with a library of handler drivers. During use, an operator selects a handler from a menu of available handler drivers that are installed on the local workstation, connects it, and enables it.

The Office Action asserts that Proskauer describes "an instrument used to test the product (handler 2004) of figure 2." Applicant traverses this assertion. It is clear from the reading of Proskauer that the product being tested is a semiconductor device. Moreover, Proskauer describes that "the term handlers is used generically to refer to packaged device handlers or wafer probers." As is well known in the art and stated in Proskauer, a device handler or wafer prober is a material handling system that positions the semiconductor device. The actual testing is accomplished by the tester 2002. The wafer prober or device handler is not the same as the instrument used to test the product as the instrument used to analyze the product as recited in Claims 2 and 3. Rather, Proskauer clearly describes that the tester 2002 is used to perform a full test or "job" on a device under test (DUT). Proskauer also describes that each handler has its own driver containing only the code necessary to operate that specific handler. However, the handler does not analyze the product as asserted in the Office Action, rather the device is analyzed or tested using the tester 2002.

As such, Proskauer does not describe that "database stores software components that are configured to be executed by the computer station to communicate with and operate the

instrument in order to analyze the product" as recited in Claim 15, nor do Amberg or Kittross teach this limitation. Additionally, Proskauer does not teach that "the database is located remotely from the computer station and automatically accesses the software components based on identification of at least one of the computer station, the instrument and the product" as recited in Claim 15. Rather, as discussed above, Proskauer teaches that files installing files to operate the handler, Proskauer does not teach a database that "automatically accesses the software components based on identification of at least one of the computer station, the instrument and the product." As such, Amberg does not make up for the deficiencies of Kittross and Proskauer with respect to Claim 15. Accordingly, Claim 15 is submitted to be patentable over the cited art for at least the reasons set forth above.

Claims 16-20 depend from Claim 15, which is submitted to be in condition for allowance. In view of the foregoing, it is submitted the claims 15-20 are also patentable over the cited art.

Applicant traverses the rejection of claim 21. Claim 21 recites a system including "a computer station configured to control operation of an instrument as the instrument analyzes a product, said computer station controlling the instrument based on an equipment file set; a test station communicating with said computer station and said instrument; and a management system database located remotely from said computer station and in communication with said computer station, said database storing said equipment file set, said database being accessible by said computer station, wherein said computer station controls said instrument during analysis of the product based on said equipment file set, and wherein said equipment file set includes a set of software components associated with said test station and independent of said product."

As acknowledged in the Office Action, Kittross and Proskauer fail to locate a database remote from the computer station. Amberg allegedly makes up for this deficiency. As explained above, Amberg's teachings are entirely unrelated to the pertinent field and would not provide any legitimate reason to make the modification suggested in the Office Action. Moreover, Proskauer does not teach "wherein said computer station controls said instrument during analysis of the product based on said equipment file set, and wherein said equipment file set includes a set of software components associated with said test station and independent of said product" as recited in Claim 21.

Claims 22-25 depend from Claim 21, which is submitted to be in condition for allowance. In view of the foregoing, it is submitted the claims 22-25 are also patentable over the cited art.

Turning to the obviousness rejection of claims 26 and 27. Claim 26 depends from Claim 21 and further recites “a developer file that enables a user to track relationships between said instrument and said computer station.” As acknowledged in the Office Action, Kittross and Proskauer fail to disclose a developer file that enables a user to track relationships between said instrument and the computer station. Blitz allegedly makes up for this deficiency.

Blitz describes that a data manager 316 passes data from the Excel workbook 312 to the instrument drivers for application to the tester 2002. Data manager 316 assembles parameter data structures that hold the specific data passed to tester 2002 during a test job. However, Blitz does not describe that the workbook 312 “enables a user to track relationships between said instrument and said computer station” as recited in Claim 26. Rather, the workbook 312 as taught by Blitz includes only device parameter data, that once determined is sent to the instrument drivers for application to the tester. Blitz does not teach that the workbook “enables a user to track relationships between said instrument and said computer station” as recited in Claim 26. Since, Blitz does not describe the developer file recited in Claim 26, Blitz also does not describe the pre-release tool recited in Claim 27. As such, Claims 26 and 27 are also patentable over the cited art.

In view of the foregoing amendments and remarks, all the Claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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